REMARKS

Summary Of Office Action

Claims 1-37 are pending in this application.

The Examiner objected to claims 16, 17, and 21 for being dependent upon a rejected base claim, but indicated that those claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 2, 6, 7, 13, 14, 23-25, 28, 30-33, and 35-37 were rejected under 35 U.S.C. §102(e) as being anticipated by Ajanovic U.S. Patent No. 6,298,426 (hereinafter "Ajanovic").

The Examiner rejected claims 1, 3, 4, 8, 10, 18, 20, 26, 29, 32, and 34 under U.S.C. §102(e) as being anticipated by Mehta et al. U.S. Patent No. 6,681,301 (hereinafter "Mehta").

Claims 5, 9, 11, 19, and 22 were rejected under 35 U.S.C. §103(a) as being obvious from Mehta in combination with Gillingham et al. U.S. Patent Application No. 2001/0047450 (hereinafter "Gillingham").

Claims 12 and 15 were rejected under 35 U.S.C. §103(a) as being obvious from Ajanovic in combination with Gillingham.

Claims 1-7 were rejected under 35 U.S.C. §112, second paragraph, because the Examiner contends that "one said pin" in claim 1 lacks sufficient antecedent basis. The Examiner suggests that it should be changed to "one of said pins."

Claims 28 and 37 were objected to because they include the word "subplurality." The Examiner suggests that the word --subset-- or --at least one of-- be used instead.

Summary Of Applicant's Reply

Applicant appreciates the indication that claims 16, 17, and 21 contain allowable subject matter.

Applicant has amended claim 1, replacing "one said pin" with --one of said pins-- as suggested by the Examiner. Accordingly, applicant requests that the rejections of claims 1-7 under 35 U.S.C. §112, second paragraph, be withdrawn.

Applicant has amended claims 28 and 37, replacing the word "subplurality" with the word --subset-- as the Examiner suggested. These claims should therefore no longer be objectionable.

In accordance with the Examiner's indication of allowable subject matter, applicant has amended dependent claim 16 to be in independent form including the limitations of its base claim.

Applicant also has amended claims 1, 7, 23-31, and 35-37 to more clearly define the invention. No new matter has been added.

Reconsideration of this application in view of the amendments and the following remarks is respectfully requested.

The Rejections of Claims Under 35 U.S.C. § 102(e)

Claims 1, 2, 6, 7, 13, 14, 23-25, 28, 30-33, and 35-37 were rejected under 35 U.S.C. §102(e) as being anticipated by Ajanovic.

These rejections are respectfully traversed.

Ajanovic does not disclose output pin functionality that includes control, chip select, and clock functions as defined in applicant's claims.

To the contrary, Ajanovic purportedly discloses output pin functionality selected from a chip select function and a memory address bit function. According to Ajanovic, a multiplexer receives a chip select signal "RAS7-6/CS7-6" at one input and memory address bits "MA3-2" at its other input (*see* Ajanovic, column 7, lines 49-50; *see also* FIG. 4B, mux 402B). Indeed, all multiplexers disclosed by Ajanovic receive memory address bits in at least one input (*see* Ajanovic, FIG. 4A, mux 402A, and FIG. 4B, mux 402C and mux 402D). Ajanovic does not disclose or suggest output pin functionality that includes a clock function, as defined in applicant's claims.

Furthermore, applicant's claim 13, for example, defines a memory controller comprising a multiplexer having two inputs, wherein a "chip select signal" is coupled to one of the two inputs and a "control signal" is coupled to the other input. In accordance with applicant's specification, a "control signal" does not include a data or address signal (*see, e.g.,* applicant's specification, page 4, lines 9 and 12-13: "control, address, and data signals"). Ajanovic's control signals also do not include data or address signals: "memory controller 104 ... provides various control, address, and data signals" (Ajanovic, column 4, lines 51-53; *see also* lines 55-57 and 62). The multiplexers in Ajanovic, however, as discussed above, all have an address signal (MA) as one of their inputs.

Accordingly, because an address signal is neither a chip select signal nor a control signal, Ajanovic does not anticipate applicant's invention as defined in claim 13, which requires both a chip select signal and a control signal.

13

In sum, Ajanovic does not anticipate or render obvious applicant's invention as defined in independent claims 1, 13, 23, 25, 28, 31-33, and 35-37.

Moreover, for at least the reasons discussed above with respect to independent claims 1, 13, 23, and 28, dependent claims 2, 6, 7, 14, 24, and 30, which depend from one of those independent claims, are also not anticipated by or rendered obvious from Ajanovic.

Accordingly, applicant respectfully requests that the rejections of claims 1, 2, 6, 7, 13, 14, 23-25, 28, 30-33, and 35-37 under 35 U.S.C. §102(e) be withdrawn.

The Rejections of Claims Under 35 U.S.C. § 102(e)

Claims 1, 3, 4, 8, 10, 18, 20, 26, 29, 32, and 34 were rejected under 35 U.S.C. §102(e) as being anticipated by Mehta.

These rejections are respectfully traversed.

Independent claims 1, 8, 18, 32, and 34 and dependent claims 26 and 29 each include either "clock functions" or a "clock signal" in connection with the selectable functions of an output pin.

In contrast, Mehta purportedly discloses a memory controller whose selectable output pin is either a "data strobe" signal (DQS) or a "data mask" signal (DM) (see Mehta, FIG. 3, pin 500 "DM0/DQS9"). Neither of these signals is a clock signal. Indeed, neither the data strobe signal nor the data mask signal serves the purpose of a clock signal. A clock signal synchronizes communications between a memory controller and a memory module, and is active during the entire duration of the communication. For example, it is active when the Command and Address lines are clocked into a memory controller or a memory module (see Mehta, FIG. 4). In

14

contrast, the DQS data strobe signal is not active during that time (it is in tristate) and only becomes active when data is being read or written (Mehta, FIG. 4). In addition, Mehta's FIGS. 4-7 show that the clock signal ("CLKOUT_H") operates in conjunction with (rather than to the exclusion of) the data strobe signal ("DQS") and the data mask signal ("Data Mask").

Accordingly, because Mehta does not disclose or suggest a clock signal as part of the selectable functionality of an output pin, Mehta does not anticipate or render obvious applicant's invention as defined in claims 1, 8, 18, 26, 29, 32, and 34.

For at least the reasons discussed above with respect to independent claims 1, 8, and 18, dependent claims 3, 4, 10, and 20, which depend from one of those independent claims, are also not anticipated by or rendered obvious from Mehta.

Accordingly, applicant respectfully requests that the rejections of claims 1, 3, 4, 8, 10, 18, 20, 26, 29, 32, and 34 under 35 U.S.C. §102(e) be withdrawn.

The Rejections of Claims Under 35 U.S.C. § 103(a)

Dependent claims 5, 9, 11, 19, and 22 were rejected under 35 U.S.C. §103(a) as being obvious from Mehta in combination with Gillingham, and dependent claims 12 and 15 were rejected under 35 U.S.C. §103(a) as being obvious from Ajanovic in combination with Gillingham.
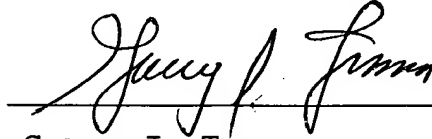
These rejections are respectfully traversed.

For at least the reasons discussed above with respect to independent claims 1, 8, 13, and 18, these dependent claims are not rendered obvious from either the combination of (1) Mehta and Gillingham or (2) Ajanovic and

15

allowance. Reconsideration and allowance are accordingly respectfully requested.

Respectfully submitted,

Garry J. Tuma
Registration No. 40,210
Attorney for Applicant

FISH & NEAVE LLP
Customer No. 1473
1251 Avenue of the Americas
New York, New York 10020-1105
(212) 596-9000

17

Gillingham (i.e., dependent claims are patentable if their independent claim is patentable).

Accordingly, applicant respectfully requests that the rejections of dependent claims 5, 9, 11, 12, 15, 19, and 22 under 35 U.S.C. § 103(a) be withdrawn.

The Objections to Claims 16, 17, and 21

Claims 16, 17, and 21 were objected to for being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These objections are respectfully traversed.

Claim 16 has been amended to be in independent form including the limitations of its base claim (there are no intervening claims). Claim 17 depends from claim 16. Accordingly, claims 16 and 17 should no longer be objectionable.

For at least the reasons discussed above with respect to independent claim 18, dependent claim 21, which depends from claim 18, should also no longer be objectionable.

Accordingly, applicant respectfully requests that the objections to claims 16, 17, and 21 be withdrawn.

Conclusion

The foregoing demonstrates that claims 1-37 are allowable. This application is therefore in condition for